

1.-28. (Previously Cancelled)

29. An electro-kinetic transporter-conditioner, comprising:

a housing;

a first electrode, disposed in said housing;

a second electrode, removably disposed in said housing, having a base member;

means, attached to said base member, for frictionally cleaning said first electrode whenever said base member of said second electrode is moved within said housing.

30. The electro-kinetic transporter-conditioner of claim 29, wherein said means for frictionally cleaning includes a strip of flexible electrically insulating material having a first end attached to said base member, and having a second end that defines a slit;

said strip extending from said base toward and beyond said first electrode such that said first electrode fits frictionally within said slit when said second electrode is disposed in said housing.

31. The electro-kinetic transport-conditioner of claim 30, wherein said strip has at least one characteristic selected from a group consisting of (a) said strip includes a polyester film, (b) said strip includes a polyimide film, (c) said strip has a strip thickness of about 0.1 mm, (d) slit has a slit length of at least 0.25", and (e) said slit has a slit width less than a thickness of said first electrode.

32. The electro-kinetic transport-conditioner of claim 30, wherein an inside bottom surface of said housing includes an upwardly projecting vane disposed to deflect said second end of said strip upwardly and away from said first electrode when said second electrode is fully disposed in said housing.

33. The electro-kinetic transporter-conditioner of claim 29, wherein said means for frictionally cleaning includes:

an arm, made of electrically insulating material, having a first distal end and a second end that is biasedly pivotably attached to said base;

a strip of flexible electrically insulating material having a first end attached to first distal end of said arm, and having a second end that defines a slit;

said arm and said strip extending from said base toward and beyond said first electrode such that said first electrode fits frictionally within said slit when said second electrode is disposed in said housing.

34. The electro-kinetic transporter-conditioner of claim 33, wherein said arm is pivotably biased towards an angle of about 90° relative to longitudinal axis of said second electrode.

35. The electro-kinetic transporter-conditioner of claim 33, wherein an inside bottom portion of said housing includes an upwardly projecting vane disposed to deflect said first distal end of said arm upwardly and away from said first electrode when said second electrode is fully disposed in said housing.

36. The electro-kinetic transporter-conditioner of claim 35, wherein:

said base of said second electrode includes a downwardly projecting member;

said inside bottom portion of said housing defines an opening sized to receive said projecting member of said base when said second electrode is fully inserted into said housing;

wherein said arm and said strip attached thereto are pivoted upward and parallel to a longitudinal axis of second electrode.

37. The electro-kinetic transporter-conditioner of claim 32, further including a barrier wall mounted on said inside bottom surface, said barrier wall disposed between a bottommost portion of said first electrode and a bottommost portion of said second electrode.

38. (Previously Cancelled)

39. An electrode cleaner for use with an electro-kinetic transporter-conditioner that includes a first electrode, and a removable second electrode having a base member, the electrode cleaner comprising:

a strip of flexible electrically insulating material having a first end attached to said base member, and having a second end that defines a slit;

said strip extending from said base toward and beyond said first electrode such that said first electrode fits frictionally within said slit when said second electrode is disposed for operation of said electro-kinetic transporter-conditioner;

wherein movement of said base member causes said slit in said strip to frictionally clean an outer surface of said first electrode.

40. The electrode cleaner of claim 39, further including:

means for deflecting at least the slit-containing end of said strip into a position parallel to a longitudinal axis of said first electrode when said electro-kinetic transporter-conditioner is in operation.

41. The electrode cleaner of claim 40, wherein said means for deflecting includes a vane disposed within said transporter-conditioner such that during operation of said transporter-conditioner a distal portion of said vane contacts and so deflects said slit-containing end of said strip.

42. The electrode cleaner of claim 40, wherein said means for deflecting includes a biased pivot mechanism that attaches said strip to base of said second electrode.

43. An electro-kinetic transporter-conditioner, comprising:

a housing;

a first electrode, disposed in said housing;

a second electrode, removably disposed in said housing, having a base member;

a source of high voltage, disposed in said housing, coupled between said first electrode and said second electrode; and

at least one bead-shaped member defining a through opening;

wherein said first electrode passes through said through opening and an outer surface of said first electrode may be at least partially frictionally cleaned by movement of said bead-shaped member along a length of said first electrode.

44. The electro-kinetic transporter-conditioner of claim 43, wherein said through opening has a characteristic selected from a group consisting of (a) said through opening is formed through a geometric center of said bead-shaped member, (b) said through opening is formed parallel to but offset from a longitudinal axis of said bead-shaped member, (c) said through opening is formed offset from an inclined relative to a longitudinal axis of said bead-shaped member, (d) a cross-section of said through opening is circular, and (e) a cross-section of said through opening is non-circular.

45. The electro-kinetic transporter-conditioner of claim 43, wherein a diameter of said through opening exceeds a diameter of said first electrode by at least 0.5 mm.

46. The electro-kinetic transporter-conditioner of claim 43, wherein:

a bottom end of said first electrode is retained in a pylon; and

said bead-shaped member is bell-shaped such that when in a bottommost position along said first electrode, an air gap exists between an outer surface of said first electrode and an inner surface of said bead-shaped member.

47. An electro-kinetic transporter-conditioner, comprising:

a housing;
a first electrode, disposed in said housing;
a second electrode, removably disposed in said housing;
a high voltage generator disposed in said housing, coupled with said first electrode and said second electrode; and
wherein the first electrode is frictionally cleaned whenever said second electrode is moved within said housing.

48. An electro-kinetic transporter-conditioner, comprising:

a housing;
a first electrode, disposed in said housing;
a second electrode removably disposed in said housing;
a source of high voltage coupled with said first electrode and said second electrode;
at least one bead-shaped member defining a through opening; and
wherein movement of said bead-shaped member along said first electrode frictionally cleans the outer surface of said first electrode.

49. An elector-kinetic transporter-conditioner, comprising:

a housing;
a first electrode, disposed in said housing;
a second electrode removably disposed in said housing;

a source of high voltage, disposed in said housing, coupled with said first electrode and said second electrode;

an electrode cleaning mechanism engaging said first electrode;

wherein movement of said electrode cleaning mechanism frictionally cleans said first electrode.

50. (Once Amended, in an earlier preliminary amendment) The electro-kinetic transporter-conditioner of claim 29, wherein an inside bottom portion of said housing includes an upwardly projecting vane disposed to deflect said cleaning means upwardly and away from said first electrode when said second electrode is fully disposed in said housing.

51. An electro-kinetic transporter-conditioner, comprising:

a housing;

a first electrode, disposed in said housing;

a second electrode, removably disposed in said housing, having a base member;

a source of high voltage, disposed in said housing, coupled between said first electrode and said second electrode; and

at least one slidable member having a through opening;

wherein said first electrode passes through said through opening and an outer surface of said first electrode may be at least partially frictionally cleaned by movement of said slidable member along a length of said first electrode.

52. The electro-kinetic transporter-conditioner of claim 51, wherein said through opening has a characteristic selected from a group consisting of (a) said through opening is formed through a geometric center of said slidable member, (b) said through opening is formed parallel to but offset from a longitudinal axis of said slidable member, (c) said through opening is formed offset from at inclined relative to a longitudinal axis of said slidable member, (d) a cross-section of said through opening is circular, and (e) a cross-section of said through opening is non-circular.

53. The electro-kinetic transporter-conditioner of claim 51; wherein a diameter of said through opening exceeds a diameter of said first electrode by at least 0.5 mm.

54. The electro-kinetic transporter-conditioner of claim 51, wherein:
a bottom end of said first electrode is retained in a pylon; and
said slidable member is bell-shaped such that when in a bottommost position along said first electrode, an air gap exists between an outer surface of said first electrode and an inner surface of said slidable member.

55. An electro-kinetic transporter-conditioner, comprising:
a housing;
a first electrode, disposed in said housing;
a second electrode removably disposed in said housing;
a source of high voltage coupled with said first electrode and said second electrode;

at least one slidable member having a through opening; and
wherein movement of said slidable member along said first electrode frictionally cleans the outer surface of said first electrode.

56. An electro-kinetic transporter-conditioner, comprising:
a housing;
a first electrode, disposed in said housing;
a second electrode, removably disposed in said housing;
means, attached to said second electrode, for frictionally cleaning said first electrode whenever said second electrode is moved within said housing.

57. The electro-kinetic transporter-conditioner of claim 56, wherein said means for frictionally cleaning includes a strip of flexible electrically insulating material having a first end associated with said second electrode, and having a second end that defines a slit;
said strip extending toward and beyond said first electrode such that said first electrode fits frictionally within said slit when said second electrode is disposed in said housing.

58. An electrode cleaner for use with an electro-kinetic transporter-conditioner that includes a first electrode, and a removable second electrode, the electrode cleaner comprising:
a strip of flexible electrically insulating material having a first end associated with said second electrode, and having a second end that defines a slit;

said strip extending toward and beyond said first electrode such that said first electrode fits frictionally within said slit when said second electrode is disposed for operation of said electro-kinetic transporter-conditioner;

wherein movement of said second electrode causes said slit in said strip to frictionally clean an outer surface of said first electrode.

59. The electrode cleaner of claim 58, further including:

means for deflecting at least the slit-containing end of said strip away from said first electrode when said electro-kinetic transporter-conditioner is in operation.

60. The electrode cleaner of claim 59, wherein said means for deflecting includes a vane disposed within said transporter-conditioner such that during operation of said transporter-conditioner a distal portion of said vane contacts and so deflects said slit-containing end of said strip.

61. An electro-kinetic transporter-conditioner, comprising:

a housing;

a first electrode, disposed in said housing;

a second electrode, removably disposed in said housing;

a source of voltage, disposed in said housing, coupled between said first electrode and said second electrode; and

at least one bead-shaped member defining a through opening;

wherein said first electrode passes through said through opening and an outer surface of said first electrode can be at least partially frictionally cleaned by movement of said bead-shaped member along a length of said first electrode.

62. The electro-kinetic transporter-conditioner of claim 61, wherein said through opening has a characteristic selected from a group consisting of (a) said through opening is formed through a geometric center of said bead-shaped member, (b) said through opening is formed parallel to but offset from a longitudinal axis of said bead-shaped member, (c) said through opening is formed offset from an inclined relative to a longitudinal axis of said bead-shaped member, (d) a cross-section of said through opening is circular, and (e) a cross-section of said through opening is non-circular.

63. An electro-kinetic transporter-conditioner, comprising:

a housing;

a first electrode, disposed in said housing;

a second electrode, disposed in said housing;

a source of voltage, disposed in said housing, coupled between said first electrode and said second electrode; and

at least one slidable member having a through opening;

wherein said first electrode passes through said through opening and an outer surface of said first electrode can be at least partially frictionally cleaned by movement of said slidable member along a length of said first electrode.

Sub D2
C1
64. (New) An apparatus for conditioning air, comprising:
a vertically elongated housing;
a vertical wire-shaped emitter electrode, disposed in said housing;
a collector electrode, disposed in said housing;
a voltage generator coupled between the emitter electrode and collector electrode; and
an electrode cleaning mechanism to fictionally remove debris from said wire-shaped emitter electrode as said electrode cleaning mechanism is moved along the emitter electrode.

65. (New) The apparatus of claim 64, wherein said electrode cleaning mechanism comprises a generally planer sheet of material in which is defined a slot corresponding to said wire-shaped electrode, wherein an inner surface of said slot scrapes against an outer surface of said wire-shaped electrode as said electrode cleaning mechanism is moved.

66. (New) The apparatus of claim 64, wherein said electrode cleaning mechanism comprises a plastic member including a slot to substantially surround a portion of said wire-shaped emitter electrode, wherein an inner surface of said slot scrapes against an outer surface of said wire-shaped electrode as said electrode cleaning mechanism is moved.

Sub E1
67. (New) The apparatus of claim 66, wherein an inner end of said slot forms a small circle, said small circle being that which substantially surrounds the portion of said wire-shaped emitter electrode.

Sub E1
68. (New) The apparatus of claim 64, wherein said collector electrode is substantially parallel to said wire-shaped emitter electrode.

69. (New) The apparatus of claim 64, further comprising:
a handle connected to said collector electrode;
whereby the collector electrode can be vertically removed from said housing when said handle is moved upward by a user, thereby providing cleaning access to said collector electrode.

C1
70. (New) The apparatus of claim 64, wherein said housing includes a base portion that is wider than a remaining portion of said housing to increase stability of said housing.

71. (New) The apparatus of claim 64, further comprising a control switch located on an upper most surface of said housing, thereby providing easy user access to said control switch.

72. (New) The apparatus of claim 64, wherein said housing includes an inlet vent and an outlet vent.

73. (New) The apparatus of claim 64, wherein said collector electrode is formed from sheet metal.

74. (New) The apparatus of claim 64, wherein said collector electrode is substantially hollow, and wherein an outer surface area of said collector electrode is significantly greater than an outer surface area of said emitter electrode, the outer surface area of the collector electrode providing a substantial area for

Sub E1
cont
debris to adhere to.

Sub D3
75. (New) An apparatus for conditioning air, comprising:

a vertically elongated housing;

at first electrode array including at least two vertical wire-shaped emitter electrodes, disposed in said housing;

a second electrode array including at least one collector electrode removably disposed in said housing;

A1
a voltage generator coupled between the first electrode array and second electrode array; and

an electrode cleaning mechanism to fictionally remove debris from said wire-shaped emitter electrodes as said electrode cleaning mechanism is moved along the emitter electrode.

76. (New) The apparatus of claim 75, wherein said electrode cleaning mechanism comprises a generally planer sheet of material including a slot corresponding to a said wire-shaped electrode, wherein an inner surface of each said slot scrapes against an outer surface of a corresponding said wire-shaped electrode as said electrode cleaning mechanism is moved.

77. (New) The apparatus of claim 75, wherein said electrode cleaning mechanism comprises at least two generally planer sheets of material each including at least one slot, and each said slot corresponding to one of said wire-shaped electrodes, wherein an inner surface of each said slot scrapes against an outer surface of a corresponding said wire-shaped electrode as said generally planer sheets are moved.

Sub 23
cont. → 78. (New) The apparatus of claim 75, wherein said electrode cleaning mechanism comprises a plastic member including a slot to substantially surround a portion of a corresponding one of said wire-shaped emitter electrodes, wherein an inner surface of each said slot scrapes against an outer surface of said corresponding one of said wire-shaped electrodes as said electrode cleaning mechanism is moved.

Sub 23
cont. → 79. (New) The apparatus of claim 78, wherein an inner end of each said slot forms a small circle, each said small circle being that which substantially surrounds the portion of each said wire-shaped emitter electrode.

C1
Sub 24 → 80. (New) The apparatus of claim 75, wherein said electrode cleaning mechanism comprises at least two plastic members each including a slot to substantially surround a portion of a corresponding one of said wire-shaped emitter electrodes, wherein an inner surface of each said slot scrapes against an outer surface of said corresponding one of said wire-shaped electrodes as said electrode cleaning mechanism is moved.

Sub 23
cont. → 81. (New) The apparatus of claim 80, wherein an inner end of each said slot forms a small circle, each said small circle being that which substantially surrounds the portion of each said wire-shaped emitter electrode.

82. (New) The apparatus of claim 75, further comprising:
a handle connected to said second electrode array;

Sub E1
cont:
whereby the second electrode array can be vertically removed from said housing when said handle is moved upward by a user, thereby providing cleaning access to said second electrode array.

83. (New) The apparatus of claim 75, wherein said housing includes a base portion that is wider than a remaining portion of said housing to increase stability of said housing.

84. (New) The apparatus of claim 75, further comprising a control switch located on an upper most surface of said housing, thereby providing easy user access to said control switch.

85. (New) The apparatus of claim 75, wherein said housing includes an inlet vent and an outlet vent

86. (New) The apparatus of claim 75, wherein said collector electrode is formed from sheet metal.

87. (New) The apparatus of claim 75, wherein said collector electrode is substantially hollow, and wherein an outer surface area of said collector electrode is significantly greater than an outer surface area of each said emitter electrode, thereby providing a substantial area for debris to adhere to.